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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

SCHEDULE 13G

UNDER THE SECURITIES EXCHANGE ACT OF 1934
ANNUAL FILING

KLA-TENCOR CORPORATION
(NAME OF ISSUER)
COMMON STOCK
(TITLE OF CLASS OF SECURITIES)
482480100
(CUSIP NUMBER)
12/31/2014
(DATE OF EVENT WHICH REQUIRES FILING OF THIS STATEMENT)

CHECK THE APPROPRIATE BOX TO DESIGNATE THE RULE PURSUANT TO WHICH THIS
SCHEDULE IS FILED:

RULE 13D-1 (B)
 RULE 13D-1 (C)
 RULE 13D-1 (D)

*THE REMAINDER OF THIS COVER PAGE SHALL BE FILLED OUT FOR A
REPORTING PERSON'S INITIAL FILING ON THIS FORM WITH RESPECT TO THE
SUBJECT CLASS OF SECURITIES, AND FOR ANY SUBSEQUENT AMENDMENT
CONTAINING INFORMATION WHICH WOULD ALTER THE DISCLOSURES PROVIDED
IN A PRIOR COVER PAGE.

THE INFORMATION REQUIRED IN THE REMAINDER OF THIS COVER PAGE SHALL
NOT BE DEEMED TO BE "FILED" FOR THE PURPOSE OF SECTION 18 OF THE
SECURITIES EXCHANGE ACT OF 1934 ("ACT") OR OTHERWISE SUBJECT TO THE
LIABILITIES OF THAT SECTION OF THE ACT BUT SHALL BE SUBJECT TO ALL
OTHER PROVISIONS OF THE ACT (HOWEVER, SEE THE NOTES).

CUSIP NO: 482480100 13G Page 2 of 5 Pages

1. NAME OF REPORTING PERSON: STATE STREET CORPORATION
I.R.S. IDENTIFICATION NO. OF THE ABOVE PERSON: 04-2456637
2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
NOT APPLICABLE
3. SEC USE ONLY
4. CITIZENSHIP OR PLACE OF ORGANIZATION
BOSTON, MASSACHUSETTS
5. SOLE VOTING POWER
0 SHARES

6. SHARED VOTING POWER
8,237,282
7. SOLE DISPOSITIVE POWER
0
8. SHARED DISPOSITIVE POWER
8,237,282
9. AGGREGATED AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
8,237,282
10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES
NOT APPLICABLE
11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9
5.0%
12. TYPE OF REPORTING PERSON
HC

CUSIP NO: 482480100 13G Page 3 of 5 Pages

ITEM 1.

- (A) NAME OF ISSUER
KLA-TENCOR CORPORATION
- (B) ADDRESS OF ISSUER'S PRINCIPAL EXECUTIVE OFFICES
ONE TECHNOLOGY DRIVE
MILPITAS, CA 95035

ITEM 2.

- (A) NAME OF PERSON FILING
STATE STREET CORPORATION AND ANY OTHER REPORTING PERSON
IDENTIFIED ON THE SECOND PART OF THE COVER PAGES HERETO
- (B) ADDRESS OF PRINCIPAL BUSINESS OFFICE OR, IN NONE,
RESIDENCE
STATE STREET FINANCIAL CENTER
ONE LINCOLN STREET
BOSTON, MA 02111
(FOR ALL REPORTING PERSONS)
- (C) CITIZENSHIP: SEE ITEM 4 (CITIZENSHIP OR PLACE OF
ORGANIZATION) OF COVER PAGES
- (D) TITLE OF CLASS OF SECURITIES
COMMON STOCK
- (E) CUSIP NUMBER:
482480100

ITEM 3.

IF THIS STATEMENT IS FILED PURSUANT TO RULE 13D-1(B), OR 13D-2(B)
OR (C), CHECK WHETHER THE PERSON FILING IS A:

SEE ITEM 12 (TYPE OF REPORTING PERSON) OF THE COVER PAGE

FOR EACH REPORTING PERSON AND THE TABLE BELOW, WHICH EXPLAINS THE MEANING OF THE TWO LETTER SYMBOLS APPEARING IN ITEM 12 OF THE COVER PAGES.

SYMBOL	CATEGORY
BK	BANK AS DEFINED IN SECTION 3(A) (6) OF THE ACT.
IC	INSURANCE COMPANY AS DEFINED IN SECTION 3 (A) (19) OF THE ACT
IC	INVESTMENT COMPANY REGISTERED UNDER SECTION 8 OF THE INVESTMENT COMPANY ACT OF 1940.
IA	AN INVESTMENT ADVISOR IN ACCORDANCE WITH RULE 13D-1(B) (1) (II) (E).
EP	AN EMPLOYEE BENEFIT PLAN OR ENDOWMENT FUND IN ACCORDANCE WITH RULE 13D-1(B) (1) (II) (F) .
HC	A PARENT HOLDING COMPANY OR CONTROL PERSON IN ACCORDANCE WITH RULE 13D-1(B) (1) (II) (G) .
SA	A SAVINGS ASSOCIATIONS AS DEFINED IN SECTION 3(B) OF THE FEDERAL DEPOSIT INSURANCE ACT (12 U.S.C. 1813) .
CP	A CHURCH PLAN THAT IS EXCLUDED FROM THE DEFINITION OF AN INVESTMENT COMPANY UNDER SECTION 3(C) (14) OF THE INVESTMENT COMPANY ACT OF 1940.

CUSIP NO: 482480100 13G Page 4 of 5 Pages

ITEM 4. OWNERSHIP

THE INFORMATION SET FORTH IN ROWS 5 THROUGH 11 OF THE COVER PAGE HERETO FOR EACH OF THE REPORTING PERSONS IS INCORPORATED HEREIN BY REFERENCE.

ITEM 5. OWNERSHIP OF FIVE PERCENT OR LESS OF CLASS

NOT APPLICABLE

ITEM 6. OWNERSHIP OF MORE THAN FIVE PERCENT ON BEHALF OF ANOTHER PERSON

NOT APPLICABLE

ITEM 7. IDENTIFICATION AND CLASSIFICATION OF THE SUBSIDIARY WHICH ACQUIRED THE SECURITY BEING REPORTED ON BY THE PARENT HOLDING COMPANY OR CONTROL PERSON

SEE EXHIBIT 1 ATTACHED HERETO

ITEM 8. IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE GROUP

NOT APPLICABLE

ITEM 9. NOTICE OF DISSOLUTION OF GROUP

NOT APPLICABLE

ITEM 10. CERTIFICATION

BY SIGNING BELOW I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE SECURITIES REFERRED TO ABOVE WERE ACQUIRED AND ARE HELD IN THE ORDINARY COURSE OF BUSINESS AND WERE NOT ACQUIRED AND ARE NOT HELD FOR THE PURPOSE OR WITH THE EFFECT OF CHANGING OR INFLUENCING THE CONTROL OF THE ISSUER OF THE SECURITIES AND WERE NOT ACQUIRED AND ARE NOT HELD IN CONNECTION WITH OR AS A PARTICIPANT IN ANY TRANSACTION HAVING THAT PURPOSE OR EFFECT.

SIGNATURES

AFTER REASONABLE INQUIRY AND TO THE BEST OF HIS KNOWLEDGE AND BELIEF, EACH OF THE UNDERSIGNED CERTIFIES THAT THE INFORMATION SET FORTH IN THIS STATEMENT IS TRUE, COMPLETE AND CORRECT.

11 February 2015
STATE STREET CORPORATION

/s/ SEAN P. NEWTH
SENIOR VICE PRESIDENT,
CHIEF ACCOUNTING OFFICER AND CONTROLLER

EXHIBIT 1

THE FOLLOWING TABLE LISTS THE IDENTITY AND ITEM 3 CLASSIFICATION OF EACH SUBSIDIARY OF STATE STREET CORPORATION, THE PARENT HOLDING COMPANY, THAT BENEFICIALLY OWNS THE ISSUER'S COMMON STOCK. PLEASE REFER TO ITEM 3 OF THE ATTACHED SCHEDULE 13G FOR A DESCRIPTION OF EACH OF THE TWO-LETTER SYMBOLS REPRESENTING THE ITEM 3 CLASSIFICATION BELOW.

SUBSIDIARY	ITEM 3 CLASSIFICATION
STATE STREET GLOBAL ADVISORS FRANCE S.A.	IA
STATE STREET BANK AND TRUST COMPANY	BK
SSGA FUNDS MANAGEMENT, INC	IA
STATE STREET GLOBAL ADVISORS LIMITED	IA
STATE STREET GLOBAL ADVISORS LTD	IA
STATE STREET GLOBAL ADVISORS, AUSTRALIA LIMITED	IA
STATE STREET GLOBAL ADVISORS JAPAN CO., LTD.	IA
STATE STREET GLOBAL ADVISORS, ASIA LIMITED	IA

NOTE: ALL OF THE LEGAL ENTITIES ABOVE ARE DIRECT OR INDIRECT SUBSIDIARIES OF STATE STREET CORPORATION.